

REMARKS

Applicant appreciates the time taken by the Examiner to review Applicant's present application. Applicant has cancelled Claims 1-23, amended Claims 24 and 27 and added Claim 30-47. Applicant respectfully submits that no new matter has been added. Thus, Claims 24-47 remain pending. This application has been carefully reviewed in light of the Official Action mailed August 24, 2007. Applicant respectfully requests reconsideration and favorable action in this case.

IN THE DRAWINGS:

The Examiner has objected to FIGURE 1. Applicant has amended FIGURE 1 by adding the designation "Prior Art". Applicant respectfully requests that this rejection be withdrawn.

Rejections under 35 U.S.C. §112

Claims 9-11, 20-22 and 24-29 are rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. Applicant has cancelled Claim 9-11 and 20-22. With respect to Claim 24-29 Applicant respectfully submits that the language of these claims is described in the specification at least at paragraphs [0064]-[0076]. Accordingly Applicant respectfully requests the withdrawal of this rejection.

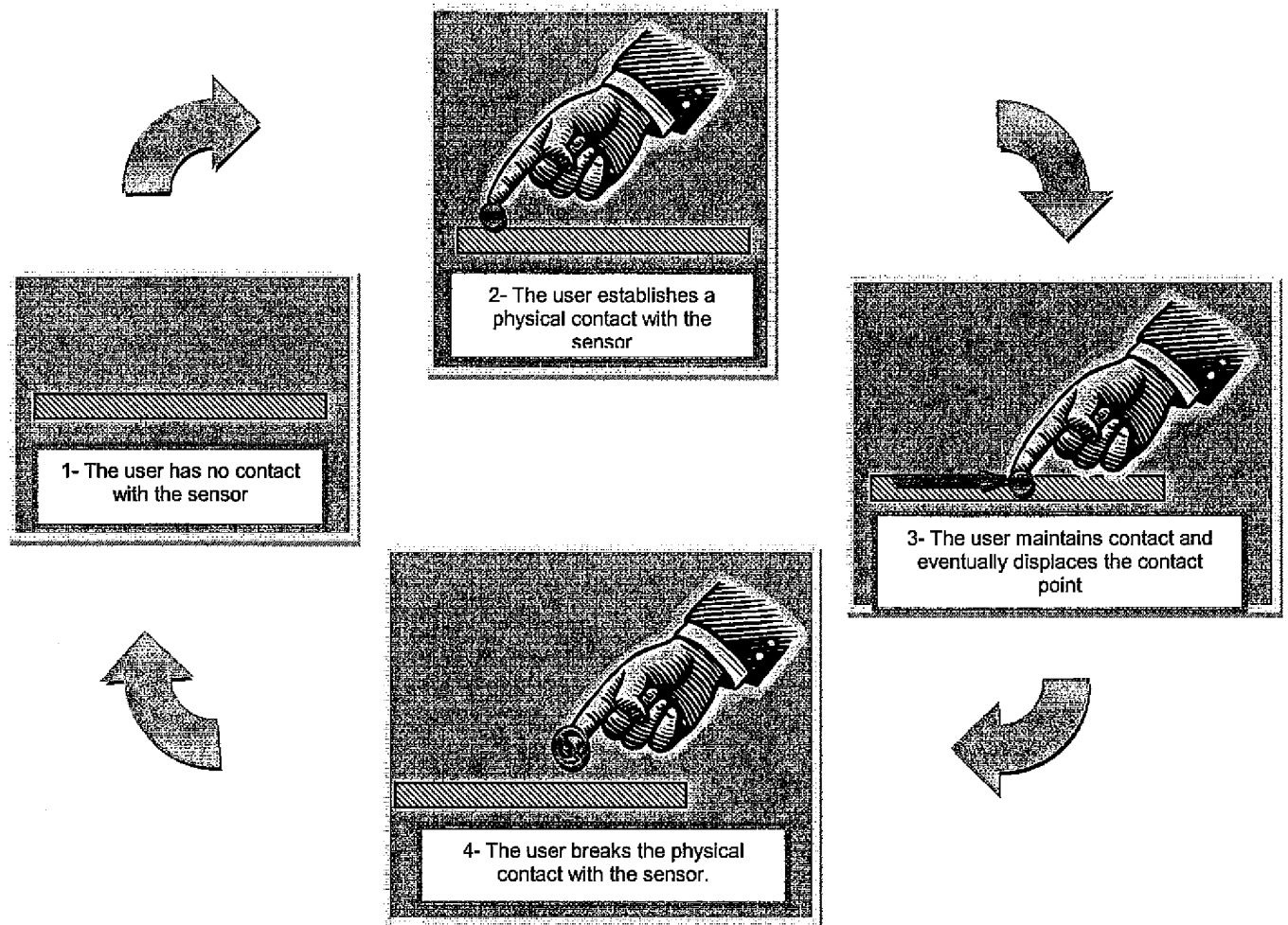
Rejections under 35 U.S.C. §§ 102, 103

Claims 24-26 and 27-29 stand rejected as anticipated by U.S. Patent No. 6,104,317 ("Panagrossi"). Claims 1, 9-12, and 20-23 stand rejected as obvious over Panagrossi in view of U.S. Publication No. 2002/0027549 ("Hirshberg"). Claims 2-8 and 13-19 stand rejected as being unpatentable over Panagrossi in view of Hirshberg and further in view of U.S. Patent No. 6,378,234 ("Luo"). Applicant has cancelled Claims 1-23 and submits that the rejection of these claims is now moot. With respect to Claims 24-29, however, Applicant respectfully traverses the rejection.

Claim 24, as amended, recites a method for an interface for data entry, comprising detecting an input with respect to the interface wherein detecting the input comprises detecting a press in a first zone of a set of zones, wherein at least one of the set of zones is non-contiguous with at least one other of the set of zones; detecting a release in a second zone of the set of zones and detecting a movement between the press and release, wherein detecting

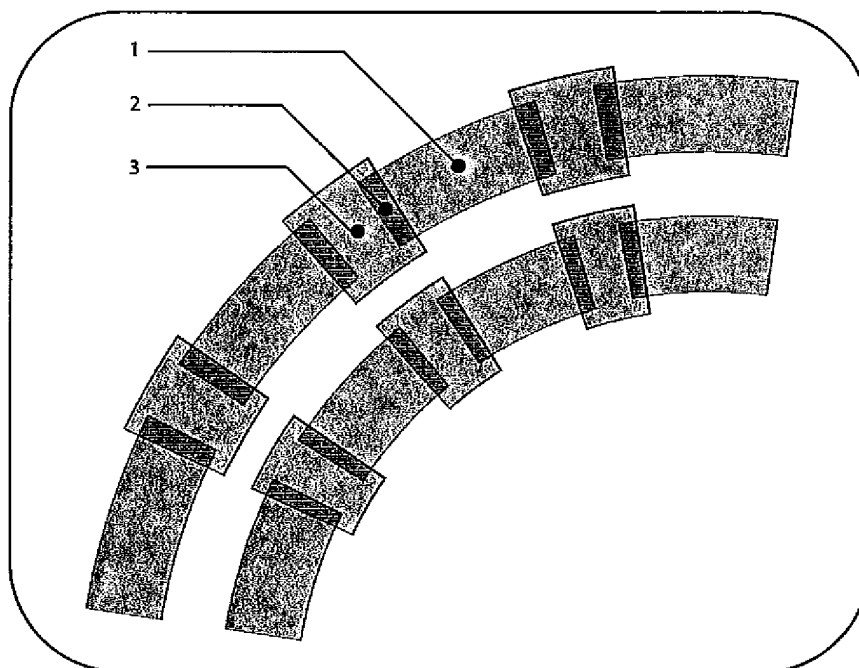
the movement further comprises detecting entering or leaving one or more of the set of zones between the press in the first zone and the release in the second zone and contact is maintained with the interface between the press in the first zone and the release in the second zone; and associating a semantic meaning with the input based on a set of semantic meanings associated with the first zone, wherein the semantic meaning is selected from the set of semantic meanings based on the second zone. Claim 27 recites similar limitations.

Thus, on one particular embodiment input from sensors may be utilized as described in the following diagram:



- 1- Thus, in one embodiment at the start there is no physical contact between the sensor and the user.
- 2- Detecting an initial press: In one embodiment, the user establishes a physical contact with the sensor at a precise location. For example, in one embodiment, the sensor may report this change of state through a **StartContact** event. This event may carry the location where the contact takes place on the sensor.
- 3- The user displaces the location of physical contact. For example, in one embodiment, the sensor may report this change of state through a **EnterZone** event. This event may carry the location where the contact is currently on the sensor.
- 4- Detecting a release: The user breaks the physical contact at a location. In one embodiment, the sensor reports this change of state through a **StopContact** event.

In conjunction with a sensor a set of keys may be presented to the user. During contact by a user the location of contact with respect to these keys may be utilized. For example, below is an example of one particular embodiment of a layout of a set of keys with interkey zones shown in red (e.g. zone 3) while the key zones (e.g. zone 1) are shown in blue (other embodiments may not have these interkey zones, may have different layouts, may have more or fewer keys zones, the layout of the zones may be different, etc.).



In one embodiment, a first zone is where a user makes contact in an initial zone (e.g. sent by the StartContact event) and releases contact in a second zone. When contact is released (e.g. a StopContact event is received), the semantic meaning can be determined based upon the key zones (e.g. the key zones where contact was initiated and the release took place)

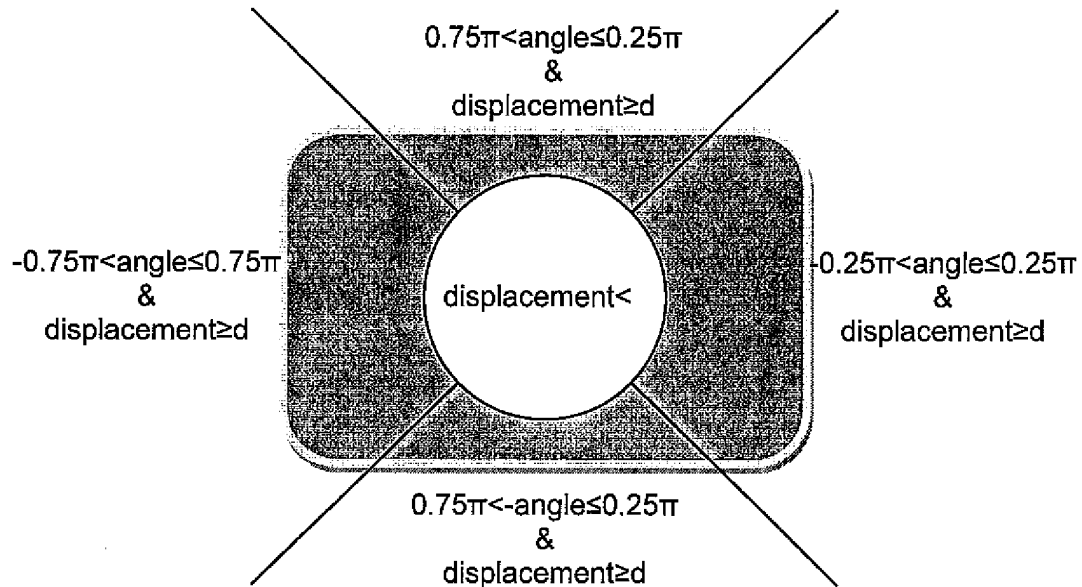
While Panagrossi, Hirshberg and an embodiment of the present invention may use the location of the initial contact (also referred to as pen down in Panagrossi and Hirshberg) and a key to identify semantic meaning Panagrossi and Hirshberg use different methods (e.g. metrics

and algorithms) than embodiments of the present invention to determine such semantic meaning.

Panagrossi and Hirshberg both directly use the information of the translation of the contact point that occurred between pen down and pen up in order to define an angle and a displacement. Panagrossi uses the relative displacement between the pen down and pen up represented by ΔX and ΔY (See, Panagrossi Figure 6 and Col 2 Line 63). Panagrossi does not correlate the location of pen down to the layout of the keys.

Hirshberg used both a first zone and a second zone. The first a zone is a geometric zone determined with respect to a key (e.g. the first key where contact was made) in the keyboard layout. However, the second zone of Hirshberg is an intellectual construction for angle and distances boundaries based on the location where contact was made: the second zone is constructed by an angular subdivision of the space around the location of pen down (See Hirshberg Paragraph [0056]). It is more clearly reference in Hirshberg's claim 2 where it states that "direction of motion falls within a first range of angles"

In other words like Panagrossi, Hirshberg also uses the displacement for the second zone and does not correlate the location of pen down to the layout of the keys. This is supported by the element 452 presented in Figure 8b and described in Paragraph [0078] of Hirshberg. The usage of direction is also referred to in claim 7 of Hirshberg. Here is a visual depiction of the equivalent enunciation of those zones in term of angles and displacement. (Note that in Hirshberg this subdivision of space is the same of Panagrossi except Panagrossi uses a non Euclidian measurement for the distance).



In contrast to Panagrossi and Hirshberg embodiments described in the present application do not use the notion of angles. In one embodiment, the location of pen down and pen up are used to associate each of the pen down (e.g. contact) and pen up (e.g. release) with zones selected from zones of a layout and according to the sequence of those two zones a semantic meaning may be determined.

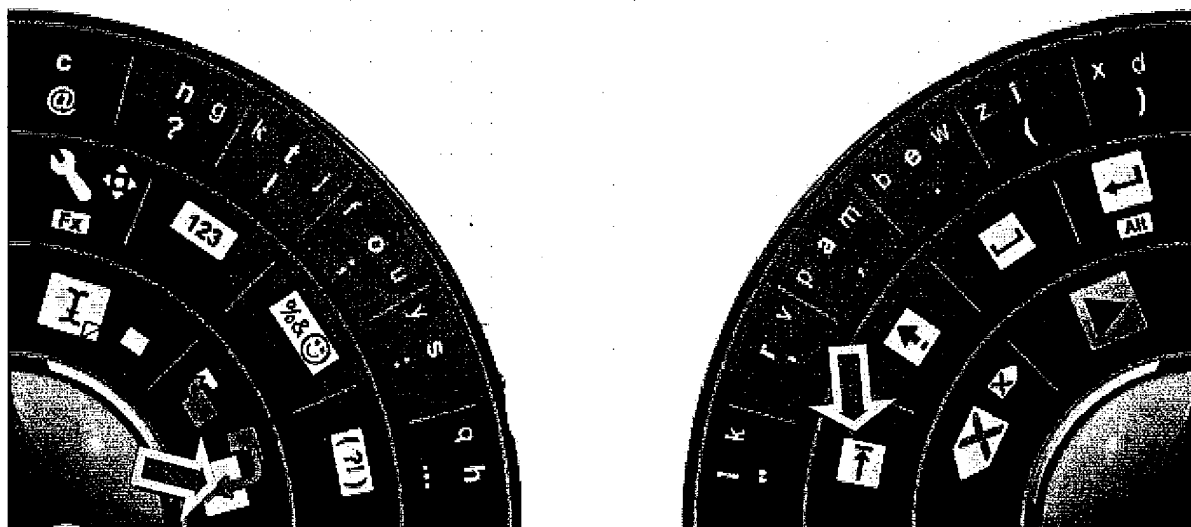
In light of the previous explanations it can be seen that in one embodiment, the embodiment of the present application use different information and logic than Panagrossi and Hirshberg. While they all have features to normalize user touches into a semantic meaning, the process is different.

Panagrossi and Hirshberg, because they use measures of distance, do not allow making non- orthogonal keyboards, both in their operation and in their design. Thus it seems as

if all the keys must be aligned in the same direction and the direction of the label of each key is not influenced by the relative position of the key among the other keys.

Embodiments of the present invention, however, may allow non-orthogonal or irregular keyboard designs and shapes, with different symbols assigned to each key, or a different number or functionality of these symbols.

Here is one embodiment of an input device which may be constructed using one particular embodiment of the present invention. Note that this embodiment has two separated input devices:



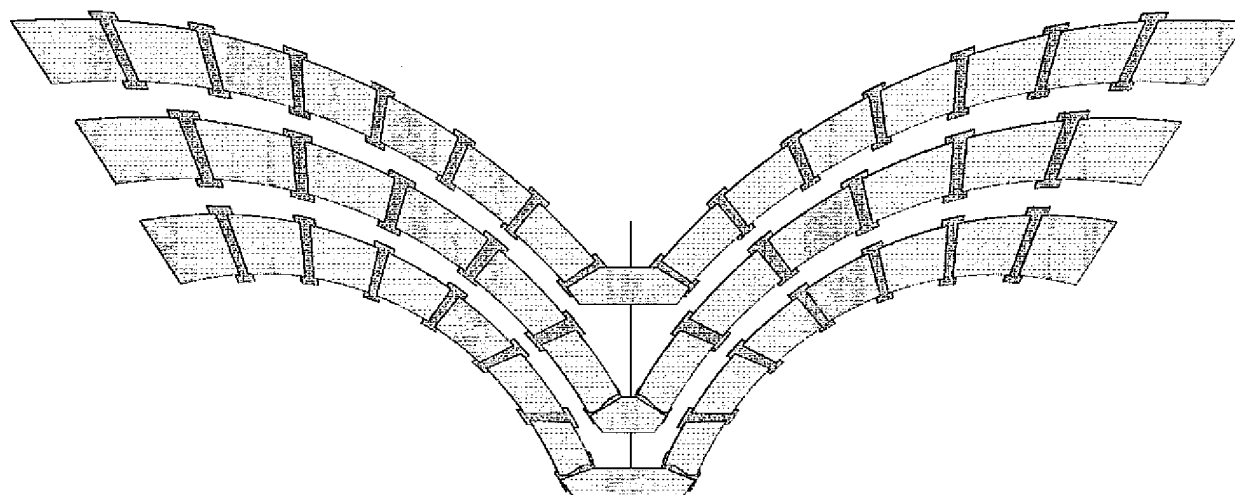
Note that both the red arrows on the keyboards are (direction wise) rotated by 90. This is possible because embodiments of the present invention base semantic meaning on initial key press and a key release and how keys are arranged in the keyboard layout, not directional input with respect to a single key as do Panagrossi and Hirshberg.

Thus, there are a number of advantages presented by embodiments of the present application over Panagrossi and Hirshberg including:

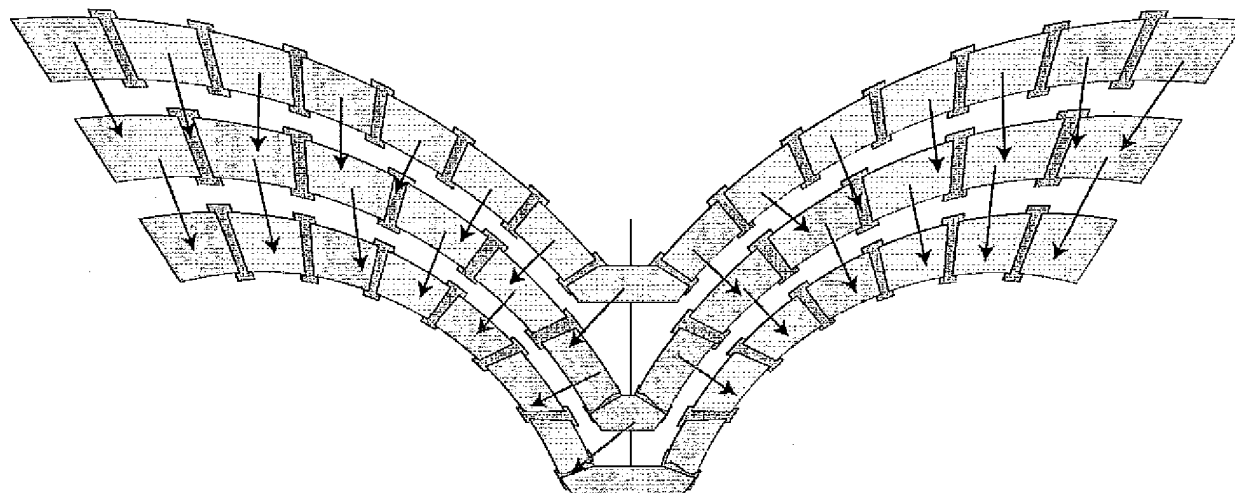
- creation and powering of irregular keyboard or other interface layouts

- easy to design such layouts
- better ergonomics that follow human anatomy

IRREGULAR KEYBOARD LAYOUTS - Compared to Panagrossi and Hirshberg, embodiments of the present invention permit the creation of irregular keyboard layouts where the movements activating each key may be determined based on the geometrical relation of the key with the surrounding keys



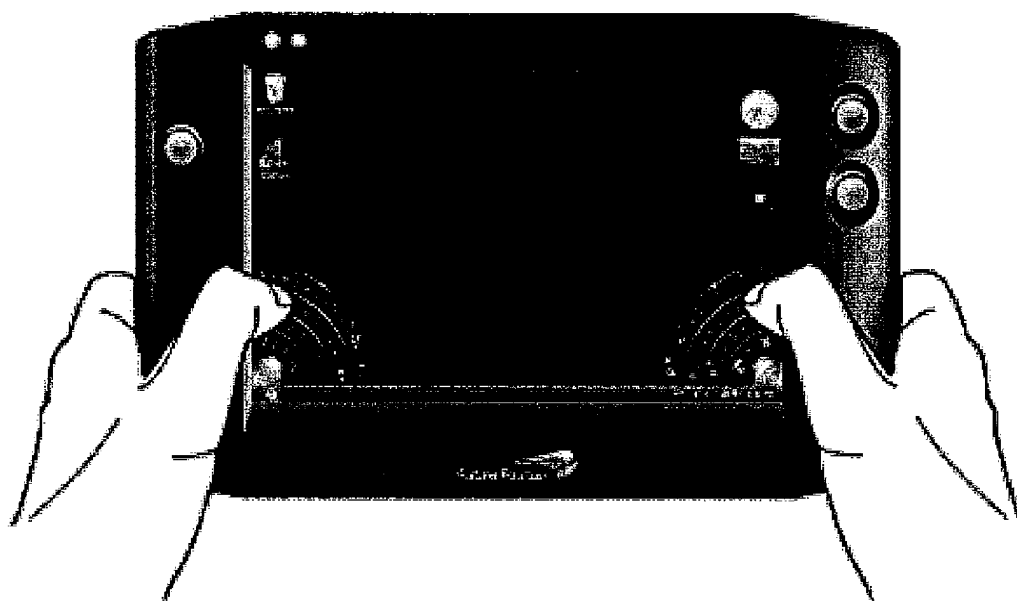
Example of an irregular keyboard layout.



Example of movements activating the down direction note that in the same row the same direction can be activate by movement opposed by almost 180 degrees.

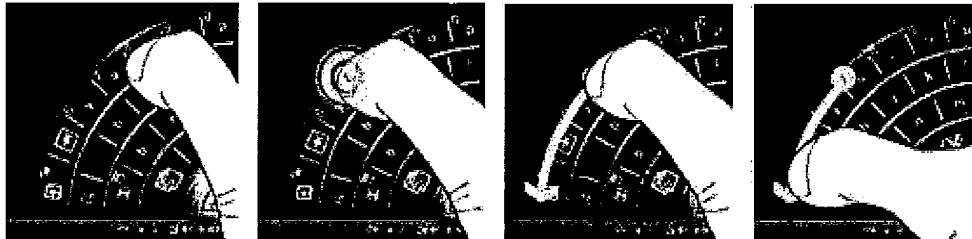
EASY CREATION OF THE LAYOUTS – While the layouts of embodiments of the present application may be irregular, their creation does not require more time or complexity than the layouts for Panagrossi and Hirshberg as, in one embodiment, only the geometric layout of the keys and their numbering (row number and their number in row) may be utilized in processing.

BETTER ERGONOMICS - Because embodiments of the present invention allow easy creation of irregular high density keyboards it allows the powering of the very ergonomic thumb keyboard layout such as that depicted below.



Keyboards for dual thumb input

Embodiments of a layout such as these are fast, and put very little stress (making the user less prone to overuse syndromes) on the user thumbs as the layout uses the most natural movement of the thumbs.



The left direction of the keys in the above layout is easily activate by a slide that used the natural rotation movement of the thumb

As can be seen from that above arguments, Panagrossi does not disclose all the limitations of Claim 24, including the limitations that recite detecting a press in a first zone of a set of zones, wherein at least one of the set of zones is non-contiguous with at least one other of the set of zones; detecting a release in a second zone of the set of zones and detecting a movement between the press and release, wherein detecting the movement further comprises detecting entering or leaving one or more of the set of zones between the press in the first zone and the release in the second zone and contact is maintained with the interface between the press in the first zone and the release in the second zone; and associating a semantic meaning with the input based on a set of semantic meanings associated with the first zone, wherein the semantic meaning is selected from the set of semantic meanings based on the second zone.

Accordingly, Applicant respectfully requests the withdrawal of the rejection of Claim 24, similar Claim 27 and their respective dependent claims 25-25 and 28-29.

Newly Added Claims 30-47

Applicant has added Claims 30-47, support for which can be found in the specification at least at Paragraphs [0063]-[0083]. As Claims 30-47 depend from Claims 24 or Claim 27 Applicant respectfully submits that the above arguments apply equally well to these claims and thus respectfully requests full allowance of Claims 30-47 for at least those reasons.

CONCLUSION

Applicant has now made an earnest attempt to place this case in condition for allowance. Other than as explicitly set forth above, this reply does not include an acquiescence to statements, assertions, assumptions, conclusions, or any combination thereof in the Office Action. For the foregoing reasons and for other reasons clearly apparent, Applicant respectfully requests full allowance of Claims 24-47. The Examiner is invited to telephone the undersigned at the number listed below for prompt action in the event any issues remain.

A Request for Continued Examination is enclosed herewith. The Director of the U.S. Patent and Trademark Office is hereby authorized to charge the RCE fee and any additional fees or credit any overpayments to Deposit Account No. 50-3183 of Sprinkle IP Law Group.

Respectfully submitted,

Sprinkle IP Law Group
Attorneys for Applicant



Ari G. Akmal
Reg. No. 51,388

Date: 11-26, 2007

1301 W. 25th Street, Suite 408
Austin, TX 78705
Tel. (512) 637-9220
Fax. (512) 371-9088